Evaluation of Staff's Retention of ACLS & BCLS Skills
Team ACLS / BCLS

Team ACLS / BCLS

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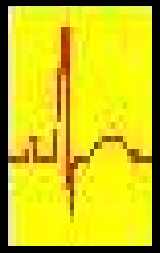
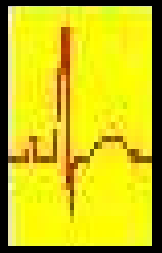


Objectives

- Discuss the significance of study
- Explain the methodology used in this study
- Examine the results of the study
- Discuss the significance of the study

Significance

- cardiac arrest / yr
- outcome = survival to discharge
  - In-Hospital
  - Pre-Hospital
- training BCLS / ACLS
  - standards (JCAHO , AHA – ECC – ILCOR)
  - costs
- review of the literature



Purpose

- Evaluate the ability of nursing staff to perform BCLS and ACLS
- Determine length of time for retention of BCLS and ACLS skills

Research Questions

- What is the current level of ability of nursing personnel to perform identified resuscitative skills?
- What is the length of time before a participants ability to perform identified resuscitative skills falls below acceptable levels?

Research Questions

- Which of the resuscitative skills must be taught just in time?
- What demographic variables have predictive value for proficiency in resuscitative skills?

Design

- prospective
- repeated measures
  - Initial, post-training, & final testing
- quasi-experimental
  - Randomized : 3, 6, 9, 12 months
  - Single Blind

Sample

- 200 bed MTF : Outpatient / Inpatient
- USAH affiliated with above
- Population of RN's = 763
  - AD
  - USAR
  - DoD Civilians
- Power Analysis (alpha set at 0.05)
  - 48 BCLS
  - 48 ACLS

Sample

- Inclusion
  - RN at this MTF (AD, USAR, DoD Civ.)
  - BCLS and/or ACLS card <10.5 mths.
  - Due to remain at MTF for 1 yr.

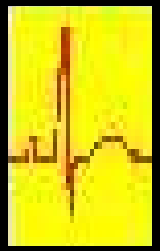
Recruitment

- BCLS / ACLS courses
- Marketing Plan
  - DON Orientation
  - Head Nurse / Staff Nurse mtgs.
  - USAR drill weekends
  - Flyers / posters
  - BCLS / ACLS courses
- Incentives

Instrumentation

- Demographic Data Sheet
- American Heart Association
  - BCLS
    - Written Tests
    - Skills Checklists
  - ACLS
    - Written Tests
    - Skills Checklists
  - Validity / Inter-rater reliability

Methods



Initial Testing

Training to Standard

- Videotape
- One-on-one Instruction
- Practice Time
- AHA Pointed

Post-Training

- Subjects randomized into 3, 6, 9, 12 month final testing groups
- BCLS or ACLS

Final Testing

- Revise Demographic Form

N911FC
SCUE
TRU

Demographics

Total Subjects: 103

BCLS : 52
ACLS : 51

Gender: 71.8 % female
28.2 % male

Age: 36.9 % > 45 y.o.
19.1 % = 36- 45 y.o.
25.2 % = 26–35 y.o.
8.7 % = 20- 25 y.o.

Demographics

Employment Status:

46.6 % = Army Active Duty

41.8 % = Army Reserves

11.7 % = Civilian RNs

Workplace

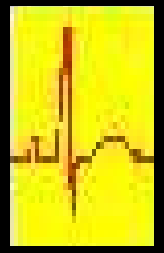
39 % = Medical-Surgical

33 % = Critical Care

28 % = Other

Demographics

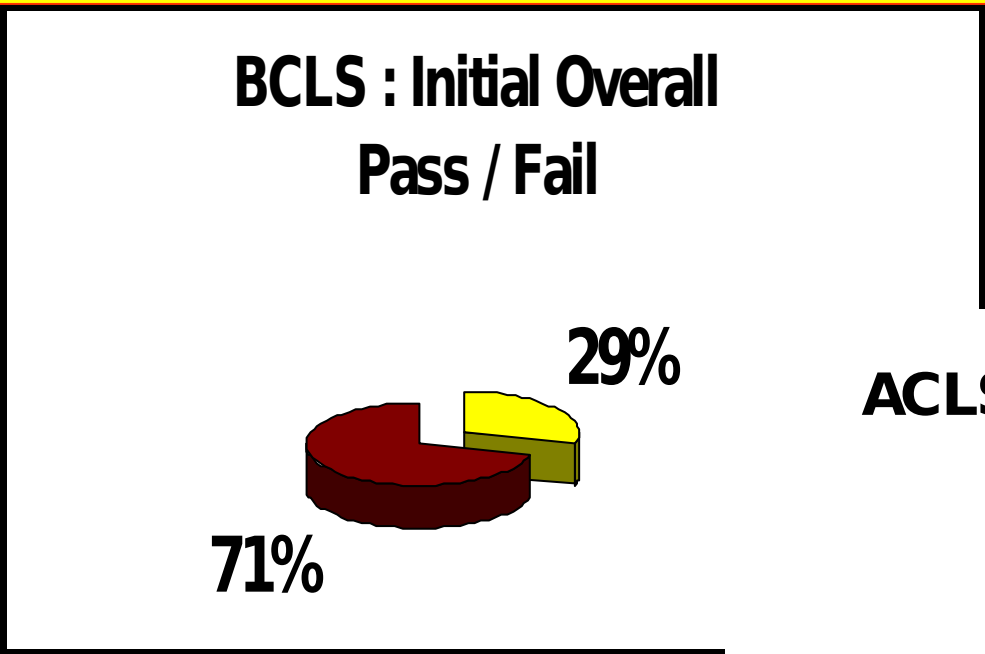
- Time Since Last BCLS Course
  - 49.0 % = 1– 3 months
  - 20.4 % = 4- 6 months
  - 30.6 % = 7-10 months
- Times Performed BCLS in past 2 Years
  - 62.0 % = none
  - 14.0 % = 3 or more times
  - 24.0 % = 1 or 2 times
- Times Performed ACLS in past 2 Years
  - 54.2 % = none
  - 24.5 % = 3 or more times
  - 20.0 % = 1 or 2 times

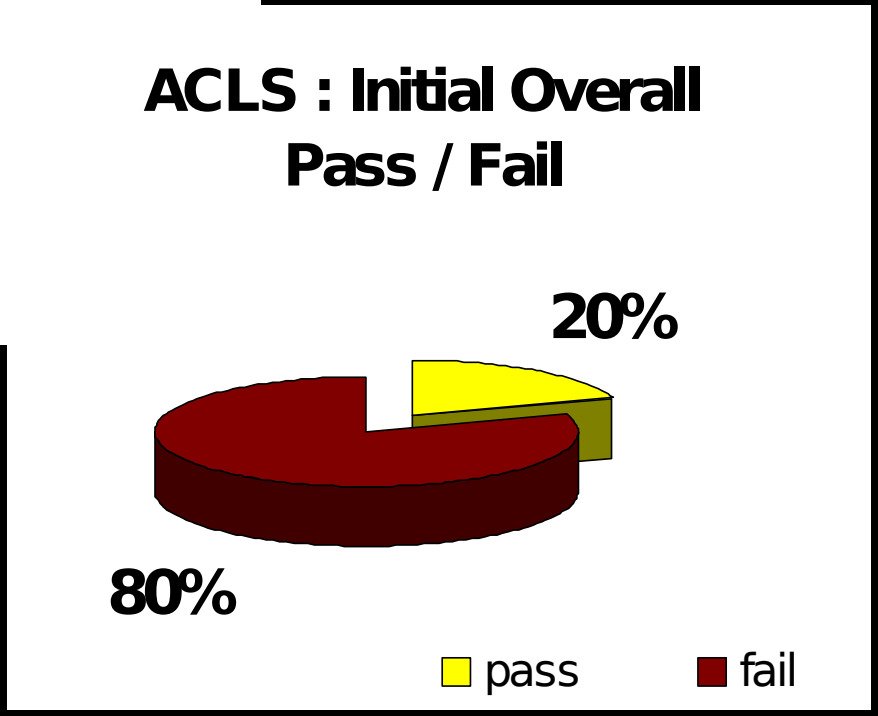


Analysis

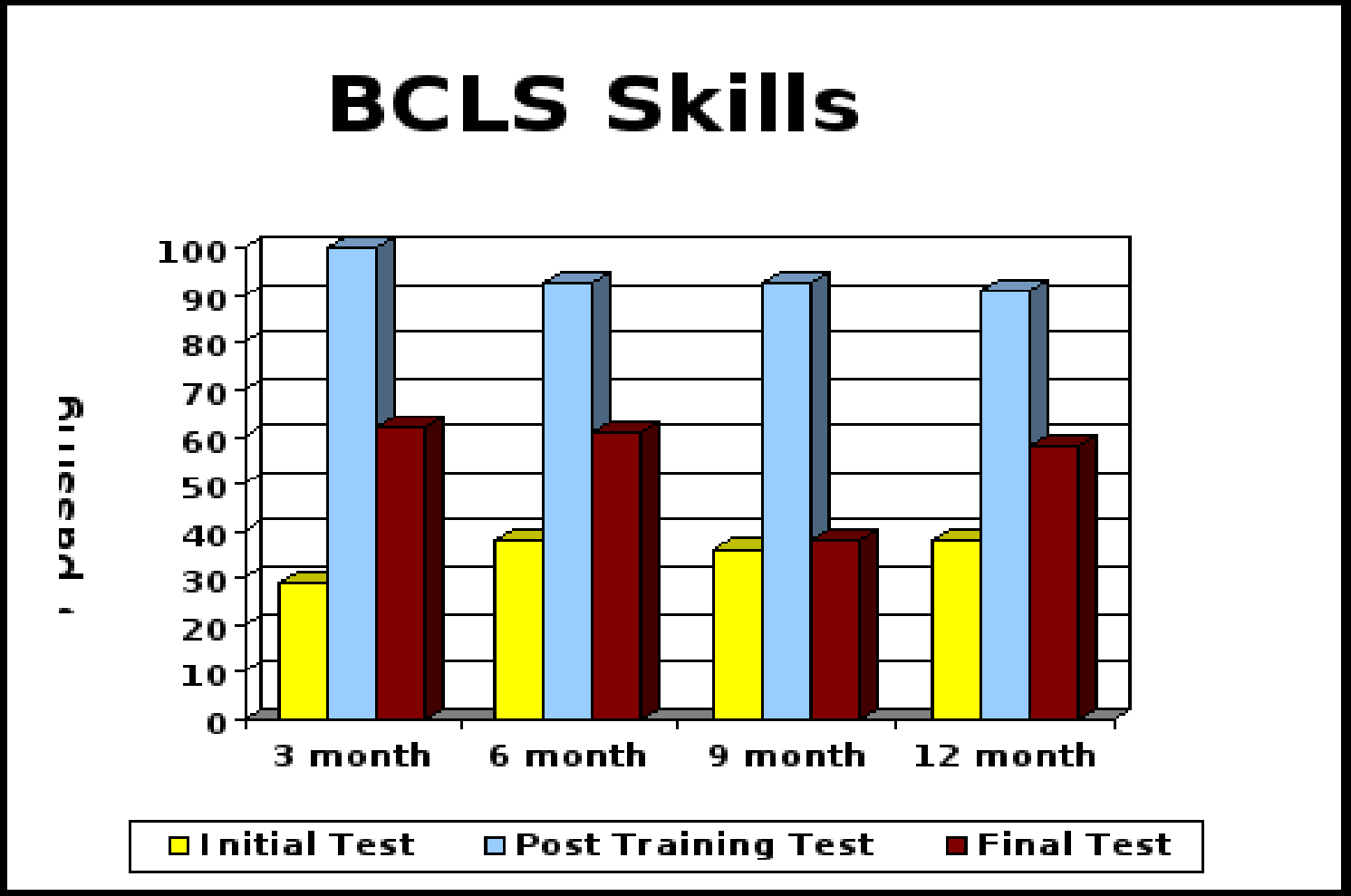
- frequencies
- measures of central tendency
- measures of dispersion
- chi square statistics
- correlation
- ANOVA
- logistic regression

Research Question #1: What is the current level of ability of nursing personnel to perform identified resuscitative skills?





Research Question #2: What is the length of time before a participants ability to perform identified resuscitative skills falls below acceptable levels?



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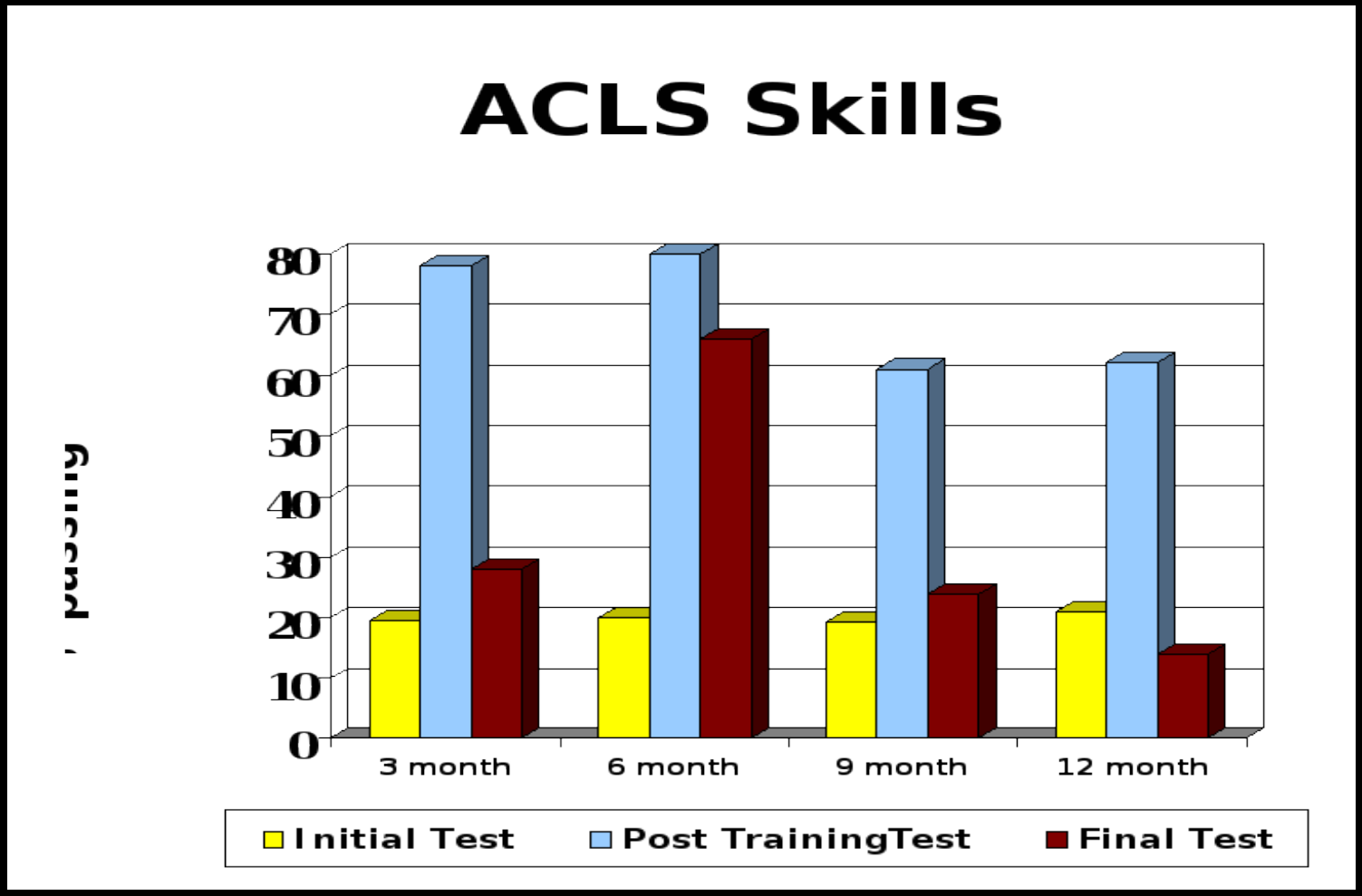


Research Question #3: Which of the BCLS resuscitative skills must be taught just in time?

Skill Tested*	Percent Degradation
Adult One - Rescuer CPR	
Majority of Compressions Satisfactory	48.0
Timing Breathing Check	27.5
Timing of Responsiveness Check	26.9
Adult Two Rescuer CPR	
Tells 2nd Rescuer - No Pulse Continue Compression	50.0
Performs Pulse Check	44.2
Continues 15:2 Ratio, Start 2 Rescuer CPR	28.8
Adult Foreign Body Airway Obstruction: Conscious & Unconscious	
Delivers 2 Slow Breaths when airway is cleared	36.5
Waited until Airway Clear/ Ventilations complete before pulse check	20.4
Repeats steps 9 thru 12 until effective	19.2
Barrier Devices	
Avg Volume of Breaths (pass/fail)	22.6
Assembles Device	3.8
Opens Airway	3.8
AED Critical Actions Checklist	
Stops CPR immediately upon arrival of AED	30.8
Maintains "All Clear" before discharging AED	21.7

Research Question #3: Which of the ACLS resuscitative skills must be taught just in time?

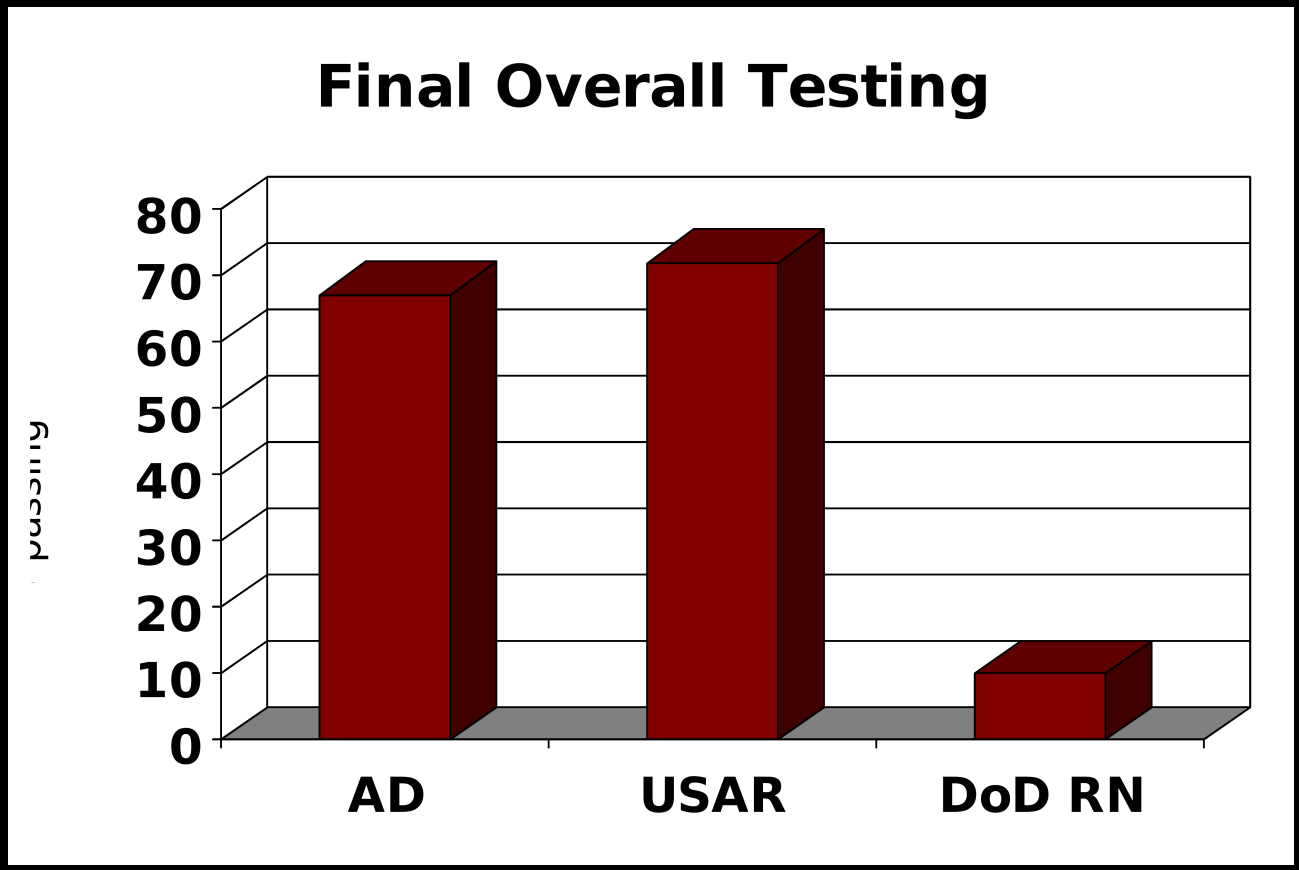
- Appropriate dosing
  - 50.5%
- Appropriate sequencing of medications
  - 41.1%
- Appropriate medication
  - 39.3%
- Checks for pulse presence post each intervention
  - 37.2%

Degradation rates

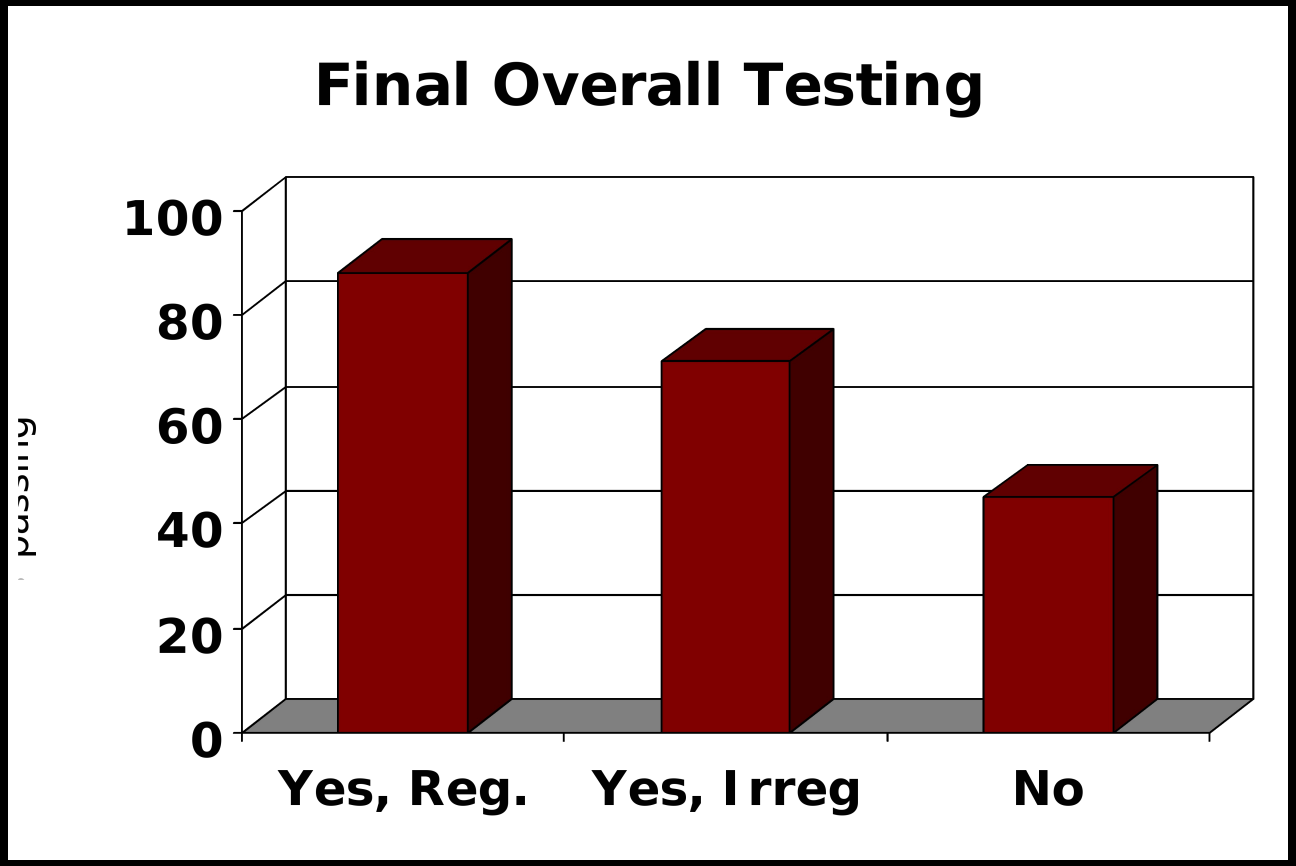
Research Question #4: What demographic variables have predictive value for proficiency in resuscitative skills?

- BCLS
  - employee status
  - the participant's periodic refreshment of BCLS skills
  - self-assessed confidence in ability to perform BCLS skills in a hospital environment.
- ACLS
  - No significance

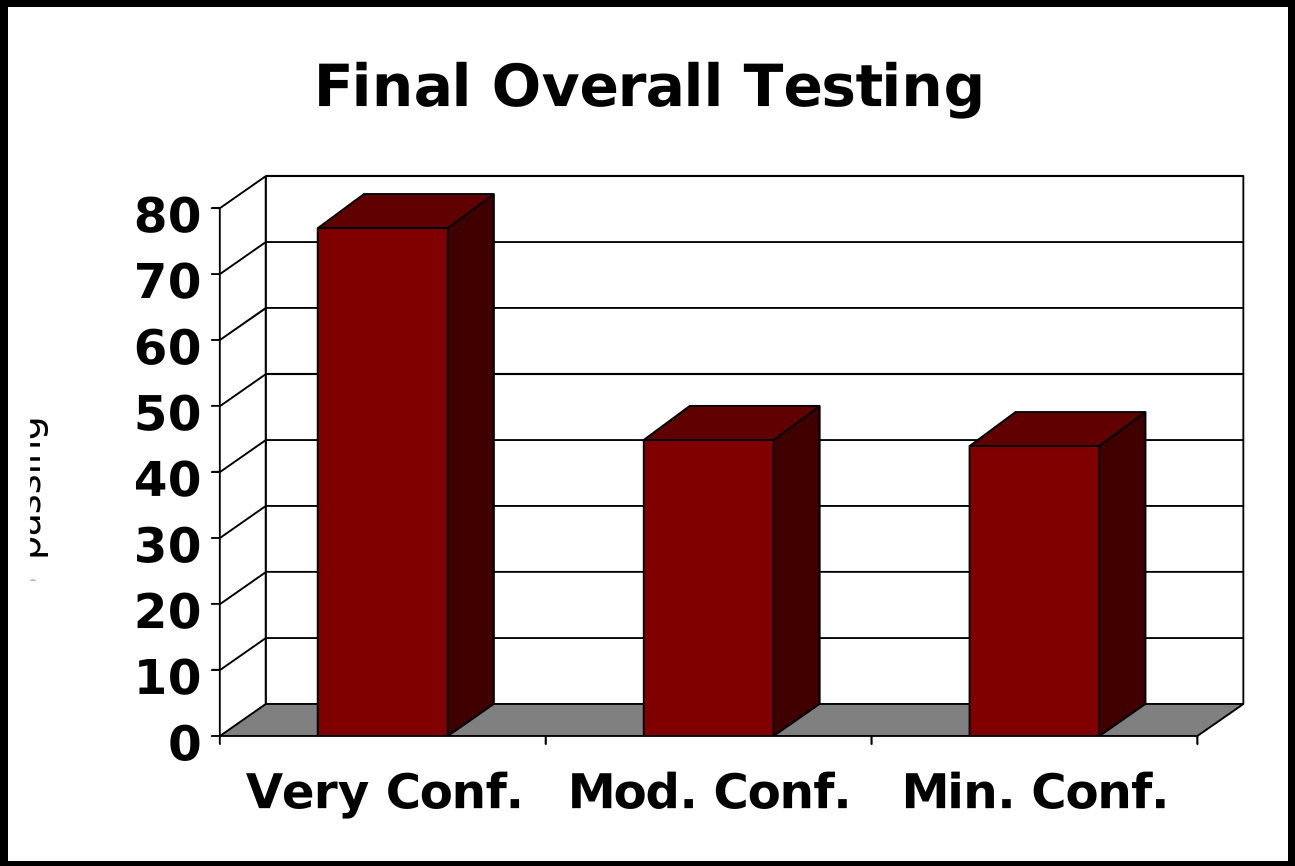
employee status



Periodic refreshment of BCLS Skills



Confidence


Final Overall Testing
80
70
60
50
40
30
20
10
0
Very Conf.
Mod. Conf.
Min. Conf.

Discussion

- low competency readiness
- skills degrade quickly
- written test scores not “like” performance test scores
- significant predictive value for successful performance of BCLS skills
  - years of military service
  - employee status
  - periodic refreshment of BCLS skills
  - self-reported confidence

Limitations of Study

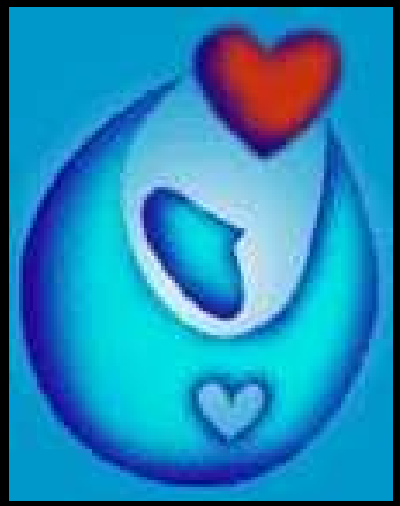
- test anxiety not studied
- voluntary convenience sample
- nominal data (pass/fail)
- new AHA guidelines
- can’t prevent independent study
- sample size per cell
- attrition

Challenges of Project

- new AHA guidelines
- “research while in a nonresearch position”
- Team Evolution
  - Unexpected resignation of PD
  - Personnel changes (PD, statistician, AI’s)
  - PI pcs’s twice
- Project Evolution
  - 91W, 91WM6, AN
  - Recruitment process
  - “Amendments” ….. a bakers dozen

Team ACLS / BCLS

contributing members



- COL Cynthia Abbott
- LTC Dennis Driscoll
- LTC Laura Rogers
- MAJ Cathy Martin
- MAJ Cathy Shutak
- MAJ Joecelyn Crittenden
- CPT Angela Simmons
- Ms. Sandi Cusick

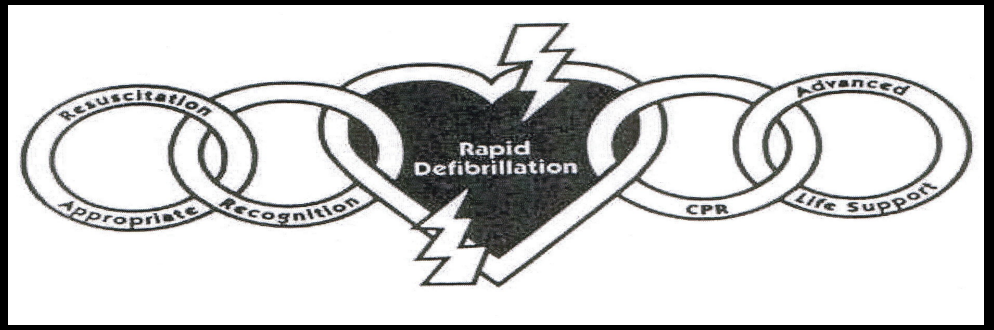
Nursing Implications

DEVELOP

SUSTAIN

competencies

First Responder Course



- simplified
- maximizes hands on performance
- feedback focus
- multi-media
- brief

ON
ENERGY SELECT
CHARGE
SHOCK
SYNC
PACER
RATE
CURRENT
PAUSE

Closing Remarks

" I long to accomplish a great and noble task; but it is my chief duty and job to accomplish humble tasks as though they were great and noble. The world is moved along, not only by the mighty shoves of its heroes, but also by the aggregate of the tiny pushes of each honest worker".